

time temperatures over most of the district were below normal. Frost warnings were required for all or parts of Washington, Oregon, northern California, and Idaho from the 8th to the 13th, inclusive. This cold period was terminated by the entrance of a storm from the northern ocean on the 14th which required the display of storm warnings at northern ports, and this was followed by two successive depressions which formed in the upper Gulf of Alaska. At the same time a very strong and widespread increase in pressure took place over other parts of the northeast Pacific Ocean, and an oceanic HIGH developed similar in character to that which had occupied the ocean during the early part of the month when LOWS generated in the upper Gulf of Alaska. With the passing of the last low-pressure area from this sector the axis of the Pacific HIGH assumed a north-south direction, and southwest gales, for which warnings were displayed at northern ports on the 17th, were followed by colder weather in Washington, Oregon, Idaho, and Nevada. Frost warnings were issued for these States on the 18th, 19th, 20th, and 21st. The frosts which occurred on the two latter dates were unusually severe, especially in eastern Washington, eastern Oregon, and Idaho, where several stations reported the lowest April temperatures of record. No general warnings were issued thereafter until the close of the month.—*Thomas R. Reed.*

RIVERS AND FLOODS

By H. C. FRANKENFIELD

The great flood in the lower Mississippi Valley continued throughout the month and can not yet be properly discussed. After the flood has finally subsided a special report will be made in the form of a MONTHLY WEATHER REVIEW SUPPLEMENT. Perhaps it will be sufficient at this time to state only that the flood from Cairo, Ill., southward was the greatest in the history of the lower Mississippi Valley, although from New Orleans, La., to the Gulf of Mexico not the greatest as to actual stages, as the premeditated cutting of the levee at Caernavon, La., depressed the flood crest at New Orleans at least 2 to 2½ feet, and possibly a little more.

The following table shows the crest stages at certain river stations where they exceeded previous records, and also the highest recorded stages previous to 1927:

Station	Present flood crests		Previous records	
	Stage (feet)	Date (1927)	Stage (feet)	Date
Cairo, Ill.....	56.4	Apr. 20.....	54.7	Apr. 4, 1913 ¹
Helena, Ark.....	56.8	Apr. 26-27.....	55.2	Apr. 22, 1913
Arkansas City, Ark.....	60.5	Apr. 21.....	58.0	Apr. 22, 1922 ¹
Greenville, Miss.....	54.7	—do—.....	52.1	Apr. 25, 1922 ¹
Vicksburg, Miss.....	58.7	May 4.....	55.0	Apr. 28, 1922 ¹
Natchez, Miss.....	58.5	—do—.....	55.3	Apr. 26, 1922
Baton Rouge, La.....	47.8	May 15.....	45.7	May 16, 1922
Donaldsonville, La.....	37.1	May 16, 17.....	35.9	Do.
Yazoo City, Miss.....	37.4	May 5.....	36.5	—, 1882
Alexandria, La.....	42.4	May 8.....	41.8	July 6, 1908
Melville, La.....	46.8	May 14, 15, 16.....	45.9	May 14, 1922 ¹
Pine Bluff, Ark.....	32.4	Apr. 21.....	30.5	May 22, 1892

¹ And subsequent dates.

There were no high waters of consequence in the rivers of the Atlantic and East Gulf drainage, merely a few local rises to the flood stage or slightly higher, and without material losses.

The Ohio River was in moderate flood from Evansville to Mount Vernon, Ind., on April 16 and 17, and remained

at very high stage throughout the month below the mouth of the Wabash River.

On account of frequent rains, the interior rivers of the State of Ohio were quite high during the month, although there were only a few minor overflows without resulting damage. The same was true of the Wabash River system, the rivers of which had been very high during the month of March also. The Tennessee River was not in flood during the month except at Johnsonville, Tenn., from April 15 to 18.

The floods in the upper Mississippi system as well as those in the Arkansas and Red systems will be treated as a portion of the great flood. It may be remarked that the Illinois River was continuously in great flood throughout the month.

Heavy rains on April 7 and 8 and again on April 18 and 19 over the drainage area of the Arkansas River from Wichita, Kans., to the Kansas-Oklahoma line caused more or less severe floods in the tributary streams and a crest of 20.0 feet, 5.0 feet above flood stage, in the Arkansas River at Arkansas City, Kans., on April 9.

The loss and damage, mainly along the tributary streams, amounted, as reported, to \$235,500, of which \$105,000 was in prospective crops. The reported value of property saved through the warnings was \$45,000.

West Gulf drainage.—A series of heavy rains during the second and third decades of the month resulted in sustained floods of fair proportions in the Sabine, Neches, and Trinity Rivers, for which warnings were issued as required, beginning with April 13. A great quantity of livestock and other movable property was moved upon receipt of the warnings, and the reported value of property saved thereby was \$50,000. Losses as given aggregated \$58,500, all in the Trinity River area, and about equally divided between prospective crops and business suspension. A moderate flood in the Guadalupe River of Texas from April 14 to 18 was also well forecast, and virtually no losses resulted. There were also moderate floods from April 4 to 7 and April 27 to May 5 in the Rio Grande from below Albuquerque to San Marcial, N. Mex., that were well forecast. No reports of damage were received.

Pacific drainage.—No rises of consequence occurred except in the Colorado River and tributaries within the State of Colorado. They passed off without special incident.

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC DRAINAGE					
James: Columbia, Va.....	Feet 18	Apr. 23	Apr. 23	Feet 18.5	Apr. 23
EAST GULF DRAINAGE					
Etowah: Canton, Ga.....	11	Apr. 11	Apr. 11	12.7	Apr. 11
Pearl: Jackson, Miss.....	20	Apr. 3	Apr. 9	21.9	Apr. 6
West Pearl: Pearl River, La.....	13	{ (1) Apr. 16	Apr. 19	16.4	Feb. 18
MISSISSIPPI DRAINAGE					
Ohio: Evansville, Ind.....	35	{ (1) Apr. 14	Apr. 18	39.9	Mar. 25
Dam No. 48, Cypress, Ind.....	35	{ (1) Apr. 15	Apr. 18	36.4	Apr. 16
Mount Vernon, Ind.....	35	{ (1) Apr. 13	Apr. 20	39.1	Mar. 26-29
Shawneetown, Ill.....	35	{ (1) Apr. 24	Apr. 24	35.5	Apr. 17
Paducah, Ky.....	43	{ (1) Apr. 13	Apr. 24	40.7	Mar. 31
Cairo, Ill.....	45	{ (1) Apr. 13	Apr. 24	44.3	Apr. 1
Tuscarawas: Gnadenhutten, Ohio.....	9	{ (1) Apr. 3	Apr. 3	47.2	Apr. 18
Scioto: Larue, Ohio.....	11	{ (1) Apr. 2	Apr. 2	56.4	Apr. 20
Green: Lock No. 2, Rumsey, Ky.....	34	{ (1) Apr. 16	Apr. 19	9.4	Apr. 3
				40.6	Mar. 2
				44.2	Mar. 27
				34.2	Apr. 17-18

¹ Continued from last month.

² Continued at end of month.

